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Global Top 20 Retailer Entrusts Network Monitoring to Airgap Network AI

The Problem

"I can get the global sales of a T-shirt to the dollar at any time of the day, but you can't tell me the state of the network without advanced notice?"
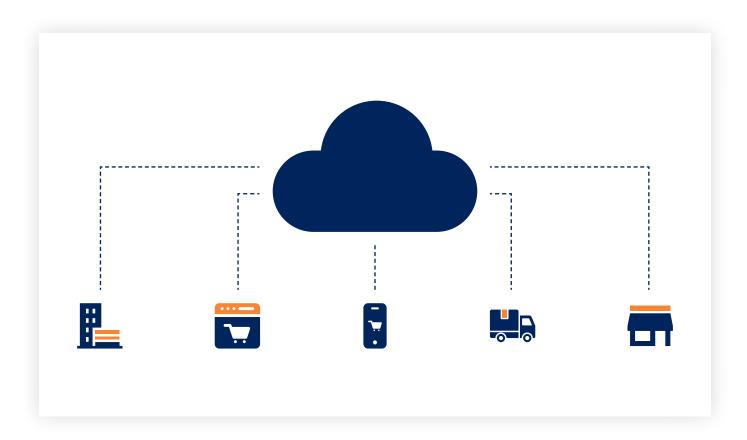
To those of us in network operations, this is a familiar expression of disbelief. To the owners of the business, however, it makes no sense at all.

The Network Architecture team at the largest specialty retailer in the United States faced this scenario before deploying Airgap Network AI. The network in question is a global deployment for one of the largest retail chains in the world, with over $16 billion in revenue in 2019. The company had spent millions deploying its network of over 30,000 devices, which included Wi-Fi access points, switches and routers for brick- and-mortar stores; an online shopping portal; global distribution points; and a full campus/branch network. As is the case in many companies, the network operations responsibility went beyond just the architecture team. The architecture team and operations team had to agree on the design and the operating model. They also needed to find a system that would work with existing systems and the new network infrastructure as they revamped the network.

Customer Profile

- American worldwide clothing and accessories retailer ~ $16B in annual revenue
- Over 30,000 devices automated at 1000+ locations ~ 50,000+ metrics monitored per second
- Airgap Network AI supervises infrastructure carrying petabits of network transaction every second.

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Stop us if you've heard this one before.

The customer's network, like most, had evolved over time. That means that while some equipment was relatively new, some had been in place for years. There were ongoing efforts to stan- dardize on Wi-Fi and SD-WAN, and there were multiple traditional and emerging vendors throughout the network. The company needed the network to support every commercial transaction without fail as the team transitioned from a legacy WAN infrastructure to SD WAN and simultaneously adopted cloud-managed Wi-Fi that included guest access and internal traffic. Managing the infrastructure, as well as the connections with ISPs, VPN providers, and network partners was handled by a globally dispersed team.

The network had grown organically with the company, so naming devices and updating the deployment map was a challenge. Clever but arcane naming conventions, "tribal knowledge," manually maintained spreadsheets, and a collection of scripts and commercial products made for a complex tool set to learn, use, and update. The company had a combination of open- source alerting and traditional monitoring as well as a cloud-managed incident workflow

service, so there were many layers of reporting to contend with when operations staff was asked to provide a snapshot of network performance. That snapshot, when completed, often provided information in "operations speak," using terms and information that did not easily translate to what the business owners expected to see and needed to know.

"In order to provide visibility, we had to log into the incident dashboard to pull reports from the alerting system, and then we had to combine that with data from the network tools.

Then we had to port all that data into our business analytics solution. It took a lot of time – it just wasn't something we could do on demand.

Unfortunately, even once we had the data it was often hard for business-level owners to make sense of the information that we could generate."

The data was technical, and it had to be translated from network-engineer speak. Sometimes they just had more questions.

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Just because something was wrong didn't mean that it was important

One of the biggest issues that our customer faced was the double-edged sword of alerting vs. root cause analysis. It seems as if a string of alerts should simplify the process of finding the root cause of an issue, but, as most operations profes- sionals know, that isn't necessarily the case. In a complex, multi-vendor network, traditional, device-level events are simply an ongoing fact of life and don't necessarily indicate whether an issue is significant or trivial. Our customer summed up the situation by saying, "We were essentially blind."

Those low-level alerts caused ticket noise and the gaps in monitoring coverage worked together to make incidents very difficult to manage.

"We would get a ticket from our incident workflow system, and it would alert us that a particular service had failed. It was then up to us to try to find out if the alert was valid and ongoing, whether it had performance effects, and if the device that had sent the alert was actually the cause of the problem."

And often this ticket noise leaked outside the technical team, garnering the kind of unnecessary attention that nobody really needs. Minor issues or a false alarms caused unwarranted escalations. The noise caused the business-oriented managers to ask more questions. These questions took time to answer. Sometimes the network operations team was on their heels due to the workload—on the defensive even though nothing was actually wrong with the network design. The ongoing SD-WAN and WiFi projects were improving service while reducing costs, but skepticism and questions repeatedly popped up.

Proving the network is good, every time

An issue that most operations professionals face is that snapshots of data are quickly invalidated. The fluid aspect of networks makes it very difficult to be proactive and learn from what had gone before without complete historical data. Due to the scale and complexity of their network, our customer could not easily retrieve, process, and visualize data in order to apply the lessons of the past to clarify situations that were often obvious in retrospect.

"There was no way to do time-series event planning, so we couldn't look at what had happened in a previous season to try to prepare better. Meanwhile the business managers just start assuming the network was the problem due to the noisy alerts, and we had to spend a great deal of manual time and energy proving that the network was, in fact, working fine."

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Time for a new solution

The company had tried to work with open-source monitoring tools; in fact, still another group within the company had worked with a well-known on-premise data-polling server. Neither approach could address their challenges. The customer decided to bring network alerting and monitoring into a centralized function that would serve the needs of both the architects and the operations staff. They realized that they needed a new approach to a long- standing challenge. Our contact had heard about network reliability engineering and learned of Net- SpyGlass while researching how to enable proactive operations in the style of Google. He decided to run a proof of concept on the Network AI solution; the fact that Network AI requires no hardware and uses only a light-weight telemetry agent made initial adoption easy. After the deployment succeeded and demonstrated the value of Network AI performance monitoring automation, a global brand decided to entrust their network to a startup.

Visibility

The first thing the customer noticed is that in the process of gathering data, Network AI created a real-time map of the network that was continuously, automati- cally maintained. Naming and tagging devices upon deployment migrated from manual integration of the inventory system and spreadsheets to just a click on the dashboard. There was no need to to rework a monitoring tool or deploy a new service when devices are added to the network; Network AI simply adapts, with zero touch.

Even better, the maps could then be organized graphically and the data collected can be used within applications included with the Network AI service and shared with other users or new applications. It was now possible to zoom out in order to show business owners the information that they needed in a form that they can understand.

Time is on my side

One of the foundational truths of Network AI is that the ability to see trends and changes in the past is essential to prepare for the future. Because Network AI is fully cloud-based, storing the necessary information and presenting it graphically is just part of the solution.

"When I need to know if a store is up or down, I can just look at a map now. I don't need to go into all the data or scan a bunch of tables to get that information. And I don't have to talk to business managers in technical details anymore. Network AI presents it to my team automatically. We look at the whole store network or the datacenter, and not at ports and links. And if I need a function or a way to parse the data that didn't come 'out of the box,' I can just write a few lines of code to deploy my own app."

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From a Corner Case to the Corner Office?

Well, maybe not, but Network AI did prove its worth quickly. There are fewer tough questions, and more accolades from the folks with a view of the city skyline, so the networking team has more time and resources to make sure the business transactions operate smoothly. In fact, the Network AI deployment has doubled in size and monitors metrics across the entire enterprise, extending the power and efficiency of performance monitoring automation from the distributed network to the data center and campus networks.

Seem too good to be true?

Hey, it's easy to find out.

The Network AI QuickStart enables you to try Airgap Network AI for yourself. You can download the Network AI Agent yourself or work with the team to give Performance Monitoring Automation a test drive. It's easy to set up: no hard- ware required and less than an hour to get rolling.

Getting Started

The Network AI service enables your organization to take a leap forward and adopt NRE practices in large-scale production in just an hour or two. You'll reduce the losses caused by network downtime while improving visibility, creating more effective workflows, and driving analytical insights. For a demo or to get started with the service, contact us today: info@airgap.io

About Airgap Networks

Airgap Network AI simplifies and automates network operations with Performance Monitoring Automation for network infrastructure. If you're tired of the old-fashioned approach to network monitoring and you have a network with more than 500 devices under management, then you're a good candidate for the Airgap Network AI service. Your organization can adopt the emerging practice of network reliability engineering using perfor- mance monitoring automation in the style of Google's network and dramatically improve network operations without building new infrastructure.

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